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ABSTRACT

Certain proposed theories on second language acquisition, their justifications, and their predictions about English are examined in this paper. The first section discusses the process of second language acquisition; the stages and strategies learners use and progress through on their way to mastery are described. The second section discusses the order of acquisition and considers the question of whether there is a universal order. The final section discusses the similarities and differences between first and second language acquisition. The evidence shows that second language learners pass through universal stages and display similar strategies, indicating that second language acquisition is a creative process of rule formation, just like first language acquisition. The order of acquisition of linguistic structure is predicted mainly by variables within the target language, such as grammatical complexity, perceptual saliency, redundancy, and semantic weight and input. The differences between first and second language acquisition involve cognitive and environmental variables as well as interference. A bibliography is appended. (Author/NCR)

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UNIVERSALS IN SECOND LANGUAGE ACQUISITION:

FOCUS ON ENGLISH

by
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Introduction

Looking at major research on second language acquisition, it seems clear that like first language acquisition, second language acquisition evidences a remarkable uniformity of stages, strategies and order of acquisition of structures across language boundaries. The implication is that second language learning is an active, constructive process. There are universal principles in operation when any language is acquired, and there is something inherent in the nature of language and the language acquisition device that will determine how a language is learned.

The major questions have centered around (1) what determines these universals, and (2) how first and second language acquisition are the same and how different.

There have been a number of hypotheses proposed regarding factors that contribute to the strategies, stages and order of second language acquisition, and regarding the similarities and differences between first and second language acquisition. Based on the fact that language acquisition is such a complex process, I reject any easy solutions, and believe that most, if not all, the proposed hypotheses do affect, in some complex, interrelated manner, second language acquisition.

This paper will be devoted to looking at the proposed theories, their justifications and their predictions about English.

The paper is divided into three sections. In the first two sections, I will discuss two separate but closely related aspects of second language acquisition. The first is the process of language acquisition--a description of the stages and strategies the learner uses and progresses through on his way to mastery. The other aspect is the order of acquisition--is there a univeral order, and what determines it? What is the bearing of process on order? In the final section, I will discuss the similarities and differences between first and second language acquisition.

Part I: PROCESS -- Stages

We have data indicating that second language learners pass through universal stages when they are in the process of acquiring a linguistic structure. In fact, the stages of second language learners bear a great resemblance to the stages of first language learners. Dan Slobin studied first language learners and from his observations, he came up with a number of operating principles and universal strategies which he believes govern language learning. His Universal F1 gives an accounting of the progression of stages leading to acquisition for first language learners:

> The following stages of linguistic marking of a semantic notion are typically observed: (1) no marking,(2) appropriate marking in limited cases, (3) overgeneralization of marking...(4) full adult system.[1]

In the very beginning stages of language learning (possibly in Slobin's stage 1 or 2), first language learners evidence the use of a "memorized chunk" of language - a piece of language which does not appear to be analyzed structurally. The child appears to have learned a formula which he sometimes uses appropriately, and sometimes not, but which he cannot yet use productively. He has not as yet acquired the rule. For example, first language learners exhibit a heavy use of "don't" and "can't" early in their acquisition of the negative. At this point, there is no other indication that they have acquired the "do support" transformation, nor do they place "not" after any other

auxiliaries when forming the negative.[2] Hence, the evidence strongly suggests that "don't" and "can't" are formulas.

Second language learners appear to pass through a similar stage. Cazden investigated the acquisition of inversion with the auxiliary in learners of English as a second language. She found that "is" as copula is inverted at 100% from the beginning, while this was not true for the other auxiliaries. She therefore questioned whether utterances of "wh + is" really involved inversion or whether such utterances as "what's" and "where's" might simply be learned chunks.[3]

Another early strategy closely related to "memorized chunks" is the use of what Hakuta calls "prefabricated patterns." In other words, the learners use a form they already know to express a semantic idea for which they don't yet know the appropriate linguistic form.[4] Hatch states that many learners acquire "dummy Verbs" which they use to express all verb meanings.[5]

There is further evidence that second language learners pass through the same kinds of stages that Slobin suggests for first language learners.

Henning Wode observed German children learning English, and discerned these three stages in the acquisition of the plural morpheme: Stage I - One form was used (usually the singular) for both singular and plural meaning. Stage II - two forms were used - the singular for both meanings, and the plural only for plural meaning. Stage III - the two forms were correctly used.[6]

Cazden found a similar sequence of stages in syntax when she investigated the development of simple and embedded wh-questions. She describes two stages. Stage I has three sub-stages: a. Both simple and embedded wh-questions are uninverted. b. Simple wh-questions are sometimes inverted and sometimes not. c. Increasing inversion in simple wh-questions with inversion being extended to wh-embedded questions. Stage II: the learner distinguishes between simple and embedded questions.[7]

Scott, in her analysis of Arab students' errors in using tense carriers has an interesting comment to make when she explains why her subjects made more errors at the end of the term than at the beginning.

> It seems to us that when the students put in tense carriers, mark tenses more often and have a better idea how to form tenses correctly, they then face the problem of which one to use. Stage One, it seems to us, is putting in a tense carrier and recognizing that it should be marked; Stage Two is learning how to mark it; and Stage Three is learning when the different markers should be used.[8]

Hatch analyzed the strategies of several different children as they moved from stage to stage, and noted that their strategies were not the same, that they did vary. One child, Paul, moved from stage to stage with a minimum of overlapping of old forms, while Homer was a "data gatherer" - more and more forms appear while nothing seems to be sorted out, although his speech becomes more and more fluent. Sorting seems to be going on, but in a way that isn't obvious.[9]

Cancino noted the same phenomenon in her observations. In her investigation of the acquisition of negation by three subjects, she found three different strategies. A gradually collected various types of negating devices and used them in free variation. J organized the data, and his acquisition of the negative was more defined and less cluttered. M is difficult to

sent to the registrars of all two year and four-year colleges and universities in the United States. Replies were received from 2,493 institutions, of which 2,323 reported registrations in one or more foreign languages. The fall 1974 survey shows a decline of 6.2 % in total foreign language registrations between 1972, the year of the last previous survey conducted by the MLA, and 1974. Regis-

characterize because there were few proposition negating utterances in her sample. Cancino asks whether we can call this acquisition systematic, and responds that we need a better definition of what is meant by systematic. She offers her own hypothesis: "To say that the learner language is systematic may mean that it evidences recognizable strategies."[10]

It seems that these stages do parallel to a great extent the stages suggested by Slobin. The learner, regardless of his exact strategies, acquires structures by using several forms in free variation at first, followed by a sorting process and the formation of a hypothesis and then a rule. I will expand on this in greater detail in the second part of the paper.

Strategies

We have just been talking about learner strategies in acquisition of structures. It seems that there is an even more fundamental strategy in language acquisition - that is the strategy of communication. The data indicates that communication is the primary strategy in language acquisition. Observing first and second language learners, we note one important similarity - both use words of high semantic content, and pay little, if any, attention to structure in the early stages of language acquisition.

> The first observed common feature is the relative importance to both categories of learner of meaning and form, motivation to develop content vocabulary outstripping motivation to develop grammar. Infants acquiring their mother tongue begin with one-morpheme sentences, and outside drill contexts, foreign learners use "broken English", that is, they effect communication through a succession of uninflected words of high communicative dynamism.[11]

Burt and Dulay state that the "relatively late acquisition of grammatical morphemes compared to content words has also become an established fact for second language learners."[12]

Bertkua suggests that the most important strategy in second language acquisition by adults is simplification.[13] Cazden suggests that while the simplifications in first and second language acquisition may be similar, they are motivated differently. First language learners simplify due to cognitive constraints, and second language learners simplify as a strategy of communication.[14]

Learners use stem forms and word order to effect communication simply because it is the most successful way.

> From the teacher's or observer's point of view, the result indicates "omission" of bound morphemes; from the learner's side, the resulting communication evidences a positive, successful selection of the semantically significant forms from the total input data.[15]

Just as learners initially do not use structure in their utterances, neither do they use grammar as a key to unlock the meaning of what they hear. Again this is true of both first and second language learners. John Macnamara speaks of the strategy of infants learning their first language:

> I have argued elsewhere...that infants learn their mother tongue by first determining, independent of language, the meaning which a speaker intends to convey to them and then

> working out the relationship between the meaning and the expressions they heard. In other words, infants use meaning as a clue to language, rather than language as a clue to meaning.[16]

D'Anglejan studied second language learners and their comprehension of complex structures in English and found that second language learners also use semantics rather than grammar as the clue to the meaning of an utterance. The subjects were presented with complex sentences in which they had to determine the subject of the embedded sentence. In most English verbs, we have the "minimal distance principle" in which the subject of the embedded sentence is the noun immediately preceding it. For example, in the sentence "Don allowed Fred to stay", Fred is the noun immediately preceding "stay" and is also its subject, as this principle predicts. However, there are verbs which violate the principle. In the sentence, "Don promised Fred to stay", although Fred is the noun immediately preceding "stay", it is not its subject. "Promise" is one of the verbs that violates the principle.

Predictably, the beginning group had not mastered this structure, while the advanced group and control group had almost achieved mastery. More interesting than this is what we learn about strategies of comprehension when we look at the different groups' interpretations of the two ambiguous sentences. The first ambiguous sentence, "The teacher asked the child to leave the room" was interpreted similarly by all three groups. "The child" was interpreted as the subject of "leave" which conforms to the minimal distance principle. More interesting was the second ambiguous sentence. "The child asked the teacher to leave the room." Here, although the minimal distance principle would predict "teacher" as the subject of "leave", the beginners interpreted "child" as subject. This seems strongly to indicate that learners use meaning, rather than structure, as the key to understanding. The advanced group, interestingly, showed some conflict in their interpretation of this sentence, although meaning predominated here too. In the control group, there was an almost equal division between those using meaning to interpret the sentence and those using structure. This shows that as the learner gains more control over the language, his strategies change somewhat, and structure has a greater influence on interpretation.[17] What this shows about strategy in understanding can be summed up quite well by a quote from Bever:

> The most likely semantic organization among a group of phrases can guide the interpretation of sentences, independently of and in parallel with perceptual processing of the syntactic structure...In the actual application of language, specific contexts must provide far stronger immediate constraints and basis for prediction of the most likely meaning of a sentence independent of its form. Thus most normal perceptual processing of sentences is probably carried out with little regard to actual sequence or structure; rather the basic relational functions (actor-action-object-modifier) are assigned on the basis of temporary ("contingent") and generic ("constant") semantic possibilities.[18]

The stages and strategies of second language acquisition just described give us some predictions about what the order of acquisition will look like. In this section, we looked at data which gave a strong indication that second language learners evidence predictable stages that in fact, look very much like the first language stages. Learners show evidence of sorting input and

forming hypotheses and then rules. In other words, it looks like second language learners creatively construct rules for their target language just as infants do for their first language. The fact that learners construct rules along with the fact that communication is the primary strategy, predict that the rules acquired first will be those which are both the least complex in terms of rule construction, and the most effective in terms of communication. In the second section of the paper, I will examine these predictions in more detail.

Part II : ORDER OF ACQUISITION -- Creative Construction

Until recently, theories of second language acquisition were different from theories of first language acquisition. Errors of second language learners were seen as predictable from contrastive analysis. Simply compare the learner's first and second languages, and where the two languages differ, the first language would necessarily interfere, and an error would occur. However, the facts do not bear this out. There is actually a remarkable similarity in the error types made by second language learners, and also in the order of acquisition of linguistic structures across language boundaries.

Again, first language acquisition research provides a good starting point for this discussion. Roger Brown studied the acquisition of fourteen English morphemes by three children learning English as their first language. These fourteen are: 1) present progressive - ing, 2) 3rd person singular, regular - s, 3) 3rd person singular irregular, 4) past regular - ed, 5) past irregular, 6) on, 7) in, 8) be as aux - contractible, 9) be as copula - contractible, 10) be as aux - uncontractible, 11) be as copula - uncontractible, 12) the plural - s, 13) possessive - 's and 14) articles - a/the. As criterion for acquisition, he used 90% accuracy in obligatory contexts in three successive sessions. He found that there was an amazing uniformity in the order of acquisition of these morphemes among the three children,[19] indicating that language acquisition is not random, that there are universals operating, and suggesting that the order of acquisition may be affected by some sort of difficulty order - if we assume that the order of acquisition reflects difficulty, with the easiest morphemes acquired first and the more difficult ones later. The suggestion, in other words, is that "the nature of early language...is determined both by the nature of English and by the nature of children as language learners."[20]

If these universals operate in first language learners, isn't it possible that they also operate in second language learners? If it is true that interference from the first language is the major determinant in the order of acquisition, then a comparison of learners of English from different native language backgrounds should show a different order of acquisition. The results, however, are just the opposite. A number of people used some or all of Brown's 14 morphemes and scored them for learners of English. Bailey did a study of 8 of the morphemes. Her results showed a significant correlation between Spanish speakers and speakers of eleven other native languages in terms of the difficulty of the morphemes.[21] Dulay and Burt did a study which included the eight morphemes in the study by Bailey plus three others. Their study included Spanish and Chinese-speaking children. They also found a high degree of correlation in the acquisition sequence. They correlated by three different methods of calculating, with the results on the degree of correlation being - 89%, 91% and 98%.[22]

Difficulty Order

The suggestion, then, is that the order of the acquisition of structures

is determined both by the nature of the language acquisition device and by the nature of the language being learned. There is "a strong indication...that it is the L2 system rather than the L1 system that guides the acquisition process."[23]

There must be factors in each language that make aspects of it more difficult or easier to acquire. We have some substantiation for this claim in Slobin's example of children who were learning both Hungarian and Serbo-Croatian simultaneously as first languages. If the same meanings were expressed in both languages in the same order by the children, we would be unable to make any statement as to differences between the languages. But if the same meaning were expressed at two different times in the two languages, then we would be able to say that the structure in the language where the meaning was first expressed was necessarily simpler. This is, in fact, what happened. In Hungarian, the children were using quite a few case endings on nouns to express locative meanings, while at the same time, they were only just beginning to express the same meanings in Serbo-Croatian, which has a much more complex system for expressing the locative. This discrepancy is a definite indication that Serbo-Croatian is more difficult than Hungarian in this instance. Another example is that of the Finnish child. In Finnish, yes/no questions cannot be asked by using rising intonation, as they can be in many other languages. At the same developmental point that children learning many other languages are asking yes/no questions, Finnish children are not asking them, at least not in any formally marked way.[24]

> Studies of bilingual children yield valuable suggestions as to what sorts of formal devices may be simpler to acquire than others. If a given meaning receives expression at the same time in both languages of a bilingual child, this suggests that the formal devices in the two languages are similar in complexity...If a given semantic domain receives expression earlier in one of the two languages, a difference in formal complexity is suggested.[25]

Grammatical Complexity

Determining what is involved in complexity is a tricky issue. It is a good idea to return to first language acquisition to see what can be learned there.

Transformational Complexity

Brown looked at the order in which the fourteen morphemes were acquired to see if he could determine what affected the order of acquisition. One suggestion is that transformational complexity is the determinant of order - i.e., the more transformations that have to be applied, the more complex the structure.

This assumes, however, that all transformations add an equal amount of difficulty to the structure, and this assumption is not justified by the data. Bever cites some cases in which added transformations do not add complexity. For example, transformations that delete internal structures do not necessarily add complexity. Passives, where the agent "by someone" is deleted, is actually less psychologically complex than passives where it is present, though one additional transformation has been used. Certain reordering transformations do not add complexity either, such as the particle movement transformation - "called up the girl" vs. "called the girl up". One is not more psychologically complex than the other.[26]

Brown suggested a much more limited hypothesis regarding transformational complexity, which he was able to confirm. This is the "law of cumulative complexity" in which one morpheme would be assumed to be more complex than another if it involved everything involved in the first morpheme and more. For example, the simple progressive is less cumulatively complex than the progressive with the auxiliary because the first only uses the progressive transformation while the second uses the progressive transformation and three others.[27] The predictions based on the law of cumulative complexity are all confirmed, both for grammatical and for semantic complexity. However, in almost all of the cases for which there seems to be confirmation of cumulative grammatical complexity, there also seems to be confirmation of cumulative semantic complexity. In other words, the two are interrelated and hard to separate. In addition, there do appear to be counter-examples even to cumulative complexity. Brown cites Cazden's comparison of the acquisition of the elliptical and the full possessive. The elliptical is acquired first, though it appears that it is cumulatively more complex than the full possessive. What does this do to our theory?

> The superior performance with the elliptical possessive may simply show that an increment to grammatical complexity, when it is a matter of a deletion transformation, does not increase learning difficulty. Or it may mean that grammatical complexity alone does increase difficulty but that the increase is overridden by facilitation stemming from superior perceptibility or the fact of nonredundancy.[28]

Brown seems to feel that the key to grammatical complexity is cumulative transformational complexity, and that we need to figure out how to separate semantic from grammatical complexity. He does admit, though, that other factors such as perceptibility and nonredundancy may affect order of acquisition. I will treat these two possibilities later in this paper. It is my opinion that cumulative transformational complexity is one aspect of grammatical complexity, but it is not the only one, nor is it obvious which one has the greatest effect on acquisition order. I will now discuss three other hypothesized contributors to grammatical complexity: permutations, exceptions and arbitrariness.

Permutations

Much of the literature and data suggest that structures in which permutation (i.e., rearrangement) of the elements takes place, and structures in which there is an interruption, will be acquired later and will be harder to process. Several of Slobin's principles for first language acquisition predict just this:

> Operating Principle D: Avoid interruption or rearrangement of linguistic units.
> Universal D1: Structures requiring permutation of elements will first appear in non-permuted form.
> Universal D2: Whenever possible, discontinuous morphemes will be reduced to, or replaced by, continuous morphemes....
> Universal D4: The greater the separation between related parts of a sentence, the greater the tendency that the sentence will not be adequately processed (in imitation, comprehension, or production).[29]

These principles are supported by data for second language acquisition.

Cazden found that uninverted yes/no questions appear prior to inverted yes/no questions - in other words, the non-permuted form appears first.[30] Hatch found that during the whole process of acquisition of the interrogative, that rising intonation was the preferred form, thus circumventing inversion.[31] Larsen-Freeman analyzed the compositions of different levels of students and found these results: "Syntactic sophistication improved from a basic NP and VP pattern at the poor level to sentences with multiple embeddings of relative clauses, gerunds, and infinitives at the excellent level."[32] In other words, all of the above-mentioned forms interrupt linguistic units and are therefore later to be acquired. Scott also found that her subjects were slow to acquire sentence combining and embedding.[33]

Exceptions

Another important factor in grammatical complexity is that of exceptions. Slobin postulates, from the example of the difficulty of acquiring the locative in Serbo-Croatian, that "a system which can be described by a small set of consistent and regular rules is easier to learn than one less consistent and regular."[34] He continues his thinking with an operating principle and a universal:

> Operating Principle F: Avoid exceptions.
> Universal F2: Rules applicable to larger classes are developed before rules relating to their subdivisions and general rules are learned before rules for special cases.[35]

This is borne out by data on second language learners. Duškova talks about common morphological errors among Czech speakers. One common error is the use of "this" and "that" with plural nouns, when "these" and "those" should be used. He points out that the difficulty here is the inconsistency in English. There is no number agreement in English between adjective and noun except in this case. Obviously, it will be harder to acquire since it is an exception. Duškova gives another example, which all of us who are ESL teachers are aware of: the omission of the "s" of the third person singular, in the present simple tense. This is due to the fact that none of the other persons are inflected at all, only the stem form is used, and the learner naturally wants to avoid exceptions and to regularize the pattern. Syntactically, Duškova, among others, talks about the problem of incorrect inversion in embedded wh-questions: *"notice whom did you meet there". This would reflect the learner's attempt to regularize and generalize from inversion in non-embedded wh-questions.[36] In many other languages, the above form would be acceptable - inversion does take place in embedded wh-questions.

Burt and Kiparsky give the example of what they call "reverse psychological verbs". Usually, verbs that relate an animate and an inanimate have the animate noun as subject and the inanimate noun as object. However, in reverse psychological verbs, the order of animate and inanimate is reversed. An example of the two would be:

> John liked the chocolates. (straightforward psychological verbs)
> The chocolates pleased John. (reverse psychological verb)

These verbs cause learners trouble because they are exceptions and the learner has no way of recognizing that.[37]

Arbitrariness

The final factor I have found that seems to affect grammatical complexity

is the factor of arbitrariness. Again, one of Slobin's universals gives us a good starting point for this discussion:

> Universal G1: When selection of an appropriate inflection among a group of inflections performing the same semantic function is determined by arbitrary formal criteria (e.g. phonological shape of the stem, number of syllables in the stem, arbitrary gender of the stem), the child initially tends to use a single form in all environments, ignoring formal selection restrictions.[38]

In other words, the child ignores arbitrary grammatical rules by using one form and not making the required distinctions. Again, the data substantiate this in second language learning also. LoCoco talks of Slobin's Universal G, and substantiates it with examples of errors made by English speakers learning German and Spanish gender. Gender in these two languages is normally assigned arbitrarily, and errors are therefore numerous.[39] The notorious prepositions are a good example from English. They are very much arbitrary, and according to Scott, among others, they are quite late in being acquired.[40] Another example is the article in English. Light speaks of the difficulties of Russians learning articles, which he attributes much more to the elusive nature of the rules in English than to the absence of the article in Russian.[41] George concurs as to the complexity of the restrictions and their arbitrariness:

> Noun groups in English, then are characterized by complicated formal means of communicating information incidental to the identity of the designatum and by considerable overlap and unpredictability in the use of formal means.[42]

Arbitrariness thus affects acquisition order, in that arbitrary rules are more difficult and are acquired later.

Grammatical complexity is thus one very important factor in determining the order of acquisition, but as implied by Brown earlier, there are indications that it is not the only factor. Brown mentioned saliency and redundancy as two possible additional factors in acquisition order, and I will discuss these now.

PERCEPTUAL SALIENCY

Perceptual saliency refers to whether it is easy or difficult for the learner to notice a particular linguistic structure. We are not even sure yet what all the components of saliency are. Those that have been suggested include position (of a morpheme in a word or of a word in a sentence), and phonological features such as whether a morpheme is bound, stressed, syllabic, and other features such as its length and contractibility.[43]

Position

The position of a morpheme in a word and a word in a sentence is the factor that has been the most extensively considered in the literature. Slobin suggests that ends of words are more perceptually salient to children than are beginnings, and that therefore, postpositions will be acquired before prepositions.

> Operating Principle A: Pay attention to the ends of words.
> Universal A1: For any given semantic notion, the

> grammatical realizations in the form of suffixes or postpositions will be acquired earlier than realizations in the form of prefixes or prepositions.[44]

An example of this principle operating in children is the fact that small children often imitate the last part of a word, for example "raff" for giraffe. Even in a language like Czech, where all words receive initial stress, children often omit the stressed syllable. Russian expresses locatives with a combination of prepositions and inflections. Children first use noun-noun for the locative, then the inflection, and only finally, the preposition. In English, prepositions are omitted in early child speech. Before they use prepositions, they begin to use locative particles like "in", "of" and "down", which often occur at the ends of utterances like "Put the shirt on" and "Take your shoes off".[45]

This same principle seems to operate in second language acquisition. Wagner-Gough looked at some studies done on learners of English and tried to find an explanation for the early acquisition of "ing". She suggests that one reason for its early acquisition is its perceptual saliency--its position at the ends of words.[46]

Krashen discusses the theory that sentence initial fixed position forms and sentence final items will be acquired more quickly and easily than material in the middle of an utterance. He cites Eileen Nam who suggested that this principle should be applied to NP and V related morphemes separately. If the above theory is modified slightly, it does seem to predict the most commonly observed difficulty order. There is also evidence in psycholinguistic experiments that subjects remember first and last digits and forget the middle ones. This indicates that this particular theory of saliency "may be the linguistic analog of the more general serial order learning curve."[47] Older subjects have a superior short term memory and this might flatten out the curve. Second language learners find the contractible copula and contractible auxiliary easier to learn than first language learners, and age might be the reason.[48]

Phonological Features

Phonological features are the other proposed determinant of perceptual saliency. Wagner-Gough, continuing her discussion of the early acquisition of "ing" suggests that phonological features also played a role in making "ing" more salient and therefore easily acquired. For example, "ing" lacks conditioned phonological variants, in other words, it is always pronounced the same regardless of the sound of the verb to which it is attached (in contrast to the way /s/ changes depending on the voicing of the root and whether the last sound is a sibilant). "Ing" also does not change in any way the base to which it is attached.[49]

Dale suggests that contractible forms are probably less salient than uncontractible forms.[50]

> Univeral E4: When a child first controls a full form of a linguistic entity which can undergo contraction or deletion, contractions or deletions of such entities tend to be absent.[51]

LoCoco supports this finding for second language learners. His subjects who were learning Spanish failed to contract "a & el" and "de & el".[52]

As suggested by Universal E4 above, learners tend to prefer full forms to deleted forms, and in addition, they prefer overt and clear marking of semantic relations:

> Operating Principle E: Underlying semantic relations should be marked overtly and clearly.
> Universal E1: A child will begin to mark a semantic notion earlier if its morphological realization is more salient perceptually....
> Universal E2: There is a preference not to mark a semantic category by Ø ("zero morpheme")....
> Universal E5: It is easier to understand a complex sentence in which optionally deletable material appears in its full form.[53]

Hakuta asks what Slobin meant by övert marking. He suggests that one possibility is syllabic vs. non-syllabic. His subject, Uguisu, acquired "ing" before "s(possessive)" and suggests that "ing" is more salient than "s" because it is more overtly marked--here he means syllabic.[54]

Perceptual saliency does not account for all the morpheme ranks however. The copula "which presumably has low perceptual saliency is ranked just after "ing" on the speaking and imitation tasks..."[55] Larsen-Freeman has her own hypothesis, that frequency in input accounts for this ordering. We will consider input shortly. At this point, it is sufficient to note that perceptual saliency isn't the complete answer, and to look at Brown's other suggestion, that redundancy is a factor affecting acquisition order.

REDUNDANCY AND SEMANTIC WEIGHT

Dale suggests that a factor in the order of acquisition is "the amount of new information conveyed by the morpheme".[56] In other words, is the morpheme redundant or not, and is it important to the meaning of the utterance or not.

Redundancy

George says that redundancy is a common feature of language and that it functions to protect communication. It is possible to remove up to 50% of a spoken message and still have it understood by a native speaker. All of us have had phone conversations on a noisy public telephone, and although it was difficult to hear, we were usually able to reconstruct the full message, simply because of redundancy.

However, the learner of the language is not so tolerant of redundancy in the language. For him, redundancy is unnecessary--if it's possible to communicate without using a redundant feature, then why bother to learn or use it?

Learners can judge redundancy in the target language in two ways--they can judge the target language by itself and find its redundancies, or they can judge the target language in comparison with their native language.

"It is difficult to make an accurate assessment of the proportion of morphological features which are redundant; undoubtedly most are on most of their occurrences."[57] Redundancy in English is exhibited by such things as subject-aux inversion in questions. Usually context and intonation make it clear that a question is being asked. Inversion in wh-questions is even more redundant because the question word signals "question" and the inversion is

strictly redundant. Plural marking of nouns may be redundant, especially if the noun is modified by a number. Hakuta reports that his subject, a young Japanese child, Uguisu, began using "gonna" without any form of "be": *"She gonna kill her" and *"Everybody gonna do it."[58] "Be" is entirely superfluous here. We understand the future meaning of "gonna" perfectly well without "be". "Be" in this case is simply redundant, and because of this fact, it is later in being acquired.

The learner can also judge efficiency and redundancy in the new language by comparing it with his mother tongue. George gives the example of the German child who sees English as efficient and non-redundant in at least one area, because of its lack of noun and verb endings in comparison with German. At the same time, the Asian child sees English as inefficient and redundant in this area, because Asian languages use stem forms of nouns and verbs, without inflections, in all contexts, while English does not. In addition, many Asian languages don't have the copula in sentences like "He is kind" and therefore the Asian child sees the copula as redundant. Again, this is a kind of predictor of order of acquisition in these two children. It is also an issue of interference from the native language, which I will deal with later in the paper.

Semantic Weight

Closely related to redundancy is the suggestion by Hatch that "semantic weight" contributes to the order of acquisition. This relates to Dale's suggestion, mentioned at the beginning of this section, that the amount of new information added by a particular linguistic structure will affect order. Just as redundant morphemes add no new information and are acquired later, also some morphemes, though not redundant, may add less information to an utterance than others and may therefore be acquired later. Hatch compares the acquisition of "can" and "where" questions with the acquisition of "be" and "do" questions. Hatch agrees with Larsen-Freeman, who was mentioned earlier, that frequency in input may account for much of the acquisition order. However, it does not account for the acquisition order of these four questions since the frequency in input is high for all four but despite this, "can" and "where" questions are acquired quickly, while "be" and "do" questions are not acquired till very late. Hatch postulates that "can" and "where" have heavier semantic weight than "be" and "do"--in other words, as Dale said, they add more information. Hatch postulates that morphemes of heavier semantic weight will be acquired earlier and morphemes of lighter semantic weight will be acquired later.[59]

INPUT

Both Hatch and Larsen-Freeman have suggested that we also take a look at the input to the learner to determine if it has any effect on the order of acquisition.

Frequency

One aspect of input is the frequency of the individual linguistic structures in the speech around the learner. There seems to be a difference of opinion as to the effect of frequency on the order of acquisition. When Brown compared the order of acquisition of morphemes in the parents' speech to their children's order of acquisition, he found no correlation whatsoever, indicating that it is at least not a factor in first language acquisition.[60] However, when Larsen-Freeman compared the frequencies of the parents in Brown's study to the speech of second language learners, she found "significant

correlations".[61] Hatch concurs with this: "In the few cases where we do have both production and input data, we can show fairly clearly that frequency of structures in the input data does influence the order of acquisition of structures."[62] It seems that frequency may be a factor, but not always, and that frequency itself certainly doesn't account for all the data.

Affective Variables

Dulay and Burt pose an important question about input. Are there times when input doesn't influence learning? They see affective variables as playing a significant role in determining the effect of the input to the learner.

> It appears we may attribute certain discrepancies between input and learner output to at least two very general but distinct sources: affective delimitors and cognitive organizers... "Affective delimitors" refer to conscious or unconscious motives or needs of the learner which contribute, among other things, to: 1) individual preference for certain input models over others, 2) prioritizing aspects of language to be learned, and 3) determining when language acquisition efforts should cease.[63]

Dulay and Burt talk about the human's basic psychological need to belong to a group. This need affects the learner's strategies: he has to decide who he will accept as a model, and who he won't accept--in other words--what input will he pay attention to and what input will he ignore? For example, children learning their first language have a preference for their peers' speech over their parents' speech, and therefore, will learn the dialect of their peers though it might be different from that of their parents.

Adults learning a second language also have to make decisions about who they will and won't accept as a model. I have seen this happen on a very conscious level. In the situation where I teach, I am the only native speaker of the three teachers, and some of the students have commented that they want American pronunciation, not British or foreign. They are indicating their preference for a model.

I have also seen the "prioritizing" suggested by Dulay and Burt happen on a conscious level. I have suggested in class that in American English, the negative and question of "have" is formed with "do". Many times students have asked about and received confirmation that "haven't" and "have you?" are not incorrect. They have indicated that since that was the case, they had more important things to worry about and would put their energy elsewhere.

Adults also determine when acquisition efforts should cease, and we thus have fossilization--speakers who have been in a country for many years but have not acquired many of the linguistic structures of the language--and have in fact, remained at the same level for a long time. Sometimes that happens when communication is adequate to meet their needs and they no longer feel the pressing necessity to improve their language. This kind of behavior may be attributed to "affective factors which delimit to a significant extent the input data which is made accessible to the cognitive organiziers."[64]

The other side of this effect of input is the "cognitive organizer". Learners can only pay attention to input that they are ready to absorb. Whether they can take something in or not depends on the "state of their internal, target language grammar."[65] Following from this, and relating back

to frequency in input, Dulay and Burt suggest that frequency will have the affect of increasing the probability that "those structures which the learner is ready to process will occur, thus increasing the chances that the learner will be able to attend to and process them."[66]

Model

One interesting phenomenon in second language learning is that errors may occur though the learner knows the respective rules and how to apply them.

> Many of the recurrent errors of systemic character, which we might be inclined to describe as errors in competence, reflect no real defect in knowledge, since most learners know the pertinent rule and can readily apply it, but the mechanism of application does not yet work automatically.[67]

Krashen studied a native speaker of Chinese who was in her 40's but had come to the U.S. when she was in her late 20's. Her errors were mainly simple "first level" rules such as 3rd person singular--s, irregular past, number agreement, etc. She was able to correct herself 95% of the time when the error was pointed out to her and was able to state the grammatical principle involved. She was also able to use her conscious linguistic knowledge in writing and careful speech. Krashen therefore contrasts subconscious acquired knowledge with consciously learned rules. He suggests that the consciously learned rules are available only when ample processing time is available, and that they are able to act only as a monitor.[68]

Dulay and Burt propose a model for second language acquisition which envisages "internal processing as the successive operation of affective delimitors, cognitive organizers, and the monitor, in that order."[69]

This preceding section has given much emphasis to the similarity between first and second language acquisition. Burt and Dulay feel that they are almost wholly parallel. I would like to devote the final section of the paper to a discussion of first and second language learning to determine if, in fact, they are wholly parallel; or, if they are different, to determine if their differences will also tell us something about the process and order of acquisition of second language learners.

Part III: COMPARISON OF FIRST & SECOND LANGUAGE LEARNERS

COGNITIVE DIFFERENCES

There seems to be pretty general agreement that there is at least one major difference between first and second language learners--the difference of cognitive maturity. First language learners are developing cognitively at the same time as linguistically, and obviously they would be unable to express a concept linguistically that they have not yet developed cognitively--despite what may be its relatively simple structure.

> It should be possible...to rank linguistic forms in terms of the psychological or cognitive complexity of the notions they express. For example, no one would expect a child to be able to form conditionals before he could make assertions, to make statements about time before making statements about place, and so on.[70]

Cognitive development therefore plays a role in the order of acquisition of structures in first language acquisition, while it does not play a role in the order of the second language structures unless the learner is a very small child.

LEARNING ENVIRONMENT

If we are going to compare first and second language learners, then we should compare their learning environments also. Wagner-Gough compared the language learning environments for the child as first language learner and the adult as second language learner. She states:

> We cannot assume that the amount of exposure to a new language as well as the nature of that exposure is equivalent for first and second language learners.[71]

The child learning his first language requires very few language cues to understand since the language addressed to him is usually contextualized within the immediate environment, and often cues are gestural. The language patterns in the input are simple; many are formulas. Language patterns and vocabulary are constantly recycled. Adults are very forgiving of errors in the child learning his first language.

On the other hand, the adult learning a second language is expected to interpret and respond to much more difficult concepts and linguistic patterns. Dialogue is often not related to the immediate environment, but focuses on displaced activities--past, future or usual activities. Sentences are not consistently simplified. They often contain embedded clauses, idioms, and a wide range of vocabulary.

> This is because the very nature of adult-adult communication is different from adult-child or child-child discourse. Adults discuss abstract ideas and activities that are displaced in time, while children describe things of the here and now.[72]

Perhaps these two factors relate to the findings by Cancino that first and second language acquisition are very similar but not exactly alike. She examined the acquisition of the copula and the negative in second language learners and compared them to a study done by Klima and Bellugi, who examined the acquisition of these same structures in first language learners. Klima and Bellugi's subjects, in their first stage of negation, used only No + Nucleus, while Cancino's subjects used a number of strategies. They used No + Nucleus much of the time, but many of the utterances were simply No + V which might be evidence of interference from Spanish, though this is not clear. In addition to this one, they used patterns such as:

NP	Aux-Neg	V		and	NP	Ø	Neg	V
You	don't	speak	Spanish		I		no	can see

The other two stages described by Klima and Bellugi are not the same either, so Cancino seems to feel that first and second language learning, though similar, are not exactly the same.[73]

INTERFERENCE

Finally, the last major difference between first and second language learners is the fact that second language learners have already mastered one linguistic system, while first language learners have not. We have already discounted the theory that interference accounts for all the errors of second language learners, but I don't think it's possible to say that interference is not a factor in errors made or in the order of acquisition.

Many studies have been done, and the results of the order of acquisition of structures have been very consistent across language boundaries, but that is not to say that there haven't been any deviations. Hakuta's subject, Uguisu, differed significantly from the results of other studies such as Dulay and Burt, and Bailey which were cited earlier. In these studies, learners of English acquired the plural morpheme much before the possessive. Uguisu, however, acquired the possessive, but during the course of Hakuta's study, she never met the 90% criterion for acquisition of the plural. Hakuta offers the suggestion that interference from Japanese was the causal factor. Japanese has an obligatory particle postposed to the noun which is the possessor, similar to English which has a bound morpheme postposed to the noun which is possessor. Japanese, however, has no morpheme for the plural. These facts would account for why Uguisu acquired the possessive but not the plural, despite all the other factors.[74]

LoCoco studied English speakers learning Spanish and German. He found that learners of Spanish often omitted prepositions and conjunctions that are not required in those specific places in English. However, learners of German did not make this type of error since German and English structures are parallel here. For example: "I see John" (without preposition) should be rendered in Spanish--"Veo a Juan" (a is the preposition) but was often rendered-*"Veo Juan" (without the preposition) on analogy with English. In German it should be rendered "Iche sehe Hans" (without preposition) and it was in fact rendered correctly. This structure is exactly parallel to English.[75]

Larsen-Freeman found in her study that:

> When a particular language group deviated from the generally agreed upon rank assigned a given morpheme, this deviation could usually be explained by examining the expression of that morpheme in the native language of the deviant group.[76]

It does seem that there are universal principles at work in interference, just as in language acquisition in general, determining where and how interference will take place. In other words, interference doesn't always occur. Sometimes structures in the two languages are parallel, but mistakes are made nonetheless, and sometimes, the two languages are not parallel, but no error occurs. Buteau looked at errors made by English speakers learning French and found instances in which there were mistakes made by learners although the structures in the two languages were parallel. Usually in French, the object pronoun is preposed, before the verb, an exception is the positive command where the object pronoun is postposed. In English, the object pronoun is always postposed, so that in positive commands, English and French structures are exactly parallel. However, English speakers learning French had less trouble with the preposed object than with the postposed object, mainly because the latter was an exception to the rule. The implication is that:

> The probability of errors could not be assessed only from the degree of divergence of the two linguistic

> structures, and consequently other factors of difficulty must be hypothesized... The concept of similarity has to be considered internally, from the point of view of the French subsystems, as well as externally, from a comparative view of English.[77]

Wode states that "certain conditions have to be met for what is commonly called interference to take place at all. Thus the notion of interference has to be developmental if it is to provide any fruitful insights."[78] George suggests that there will be no interference from the mother tongue if the foreign language is more efficient.[79] Hatch gives the other side of the coin and says that interference will occur when the form is simple in the native language but complex in the second language.[80]

To sum up, interference will take place, not simply when the two language differ, but when a parallel structure in the two languages represents an exception in the target language, or when the foreign language structure is more complex than that of the native language.

CONCLUSION

Our evidence shows that second language learners pass through universal stages and display similar strategies, indicating that second language acquisition is a creative process of rule formation, just like first language acquisition.

The order of acquisition of linguistic structures is predicted mainly by variables within the target language--variables such as grammatical complexity, perceptual saliency, redundancy and semantic weight and input.

While first and second language acquisition are very much the same, they are not wholly parallel. There are cognitive differences, environmental differences and interference variables.

We are not yet in a position to weigh the variables and to give a hierarchy that will predict the order of acquisition. That still remains to be done.

FOOTNOTES

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